CLAIMS

1. A method of producing a panel-type peripheral device including a pair of conductive panel members, each conductive panel member being provided with an insulating substrate and a conductive film on a first side of said insulating substrate, comprising:

providing a panel assembly including said pair of conductive panel members fixed to each other with respective conductive films thereof oppositely facing to each other through a gap defined therebetween, said panel assembly having a passage for communicating said gap with an environment outside of said panel assembly, said gap being hermetically sealed against the environment at a region other than said passage;

providing a support member having a rigidity higher than that of at least one of said conductive panel members of said panel assembly, said support member including a support surface larger than a second side of said insulating substrate, opposite to said first side, of said at least one of conductive panel members;

providing a receptacle accommodating a liquid material;

placing said panel assembly, said support member and said receptacle in a common environment;

securely arranging said support member over and adjacent to said at least one of conductive panel members of said panel assembly with said support surface oppositely facing to said second side of said insulating substrate;

depressurizing said common environment while said passage of said panel assembly is exposed to said common environment, to evacuate said gap in said panel assembly;

immersing said passage of said panel assembly into said liquid material in said receptacle under said common environment as depressurized; and

increasing a pressure of said common environment as depressurized, to cause a flow of said liquid material from said receptacle into said gap in said panel assembly through said passage, and to fill said gap with said liquid material, without directly applying said pressure of said common environment onto said at least one of conductive panel members arranged adjacent to said support member.

2. A method according to claim 1, wherein the step of securely arranging said support member over and adjacent to said at least one of conductive panel members of said panel assembly includes defining a second gap between said support surface of said support member and said second side of said insulating substrate of said at least one of conductive panel members, wherein the step of depressurizing said common environment includes communicating said second gap to said common environment, and wherein the step of increasing the pressure of said common environment includes hermetically sealing said second gap against said common environment.

3. A method according to claim 1, wherein said at least one of conductive panel members of said panel assembly, securely arranged over and adjacent to said support member, has a flexibility for permitting a relatively easy deformation due to a pressure fluctuation in said common environment.

4. A panel-type peripheral device produced by a method according to claim 1.

5. A panel support unit comprising said support member provided in a method according to claim 1.

6. A panel support unit according to claim 5, further comprising a second support member cooperating with said support member to securely support said panel assembly.

7. A panel support unit comprising:

said support member provided in a method according to claim 2;

a vent hole for communicating said second gap with said common environment; and

a valve member capable of opening and closing said vent hole in response to a pressure fluctuation in said common environment.

8. A method according to claim 3, wherein said panel-type peripheral device has a configuration of a touch panel including a pair of detecting elements as said pair of conductive panel members, each detecting element being provided with a transparent insulating substrate and a transparent conductive film on a first side of said insulating substrate, wherein at least one of the detecting elements of said panel assembly, securely arranged over and adjacent to said support member, has a flexibility for permitting a relatively easy deformation due to a pressure fluctuation in said common environment, and wherein said liquid material is a transparent insulating liquid material.

9. A touch panel produced by a method according to claim 8.

10. A method of producing a panel-type peripheral device including a pair of conductive panel members, each conductive panel member being provided with an insulating substrate and a conductive film on a first side of said insulating substrate, comprising:

providing a panel assembly including said pair of conductive panel members fixed to each other with respective conductive films thereof oppositely facing to each other through a gap defined therebetween, said panel assembly having a passage for communicating said gap with an environment outside of said panel assembly, said gap being hermetically sealed against the environment at a region other than said passage, at least one of said conductive panel members having a flexibility for permitting a relatively easy deformation due to a pressure fluctuation in said environment;

providing a partition wall including a

through opening, into which a part of said panel assembly is capable of being fitted in a hermetically sealed manner;

fitting said part of said panel assembly into said through opening of said partition wall in a hermetically sealed manner, in such a manner that said passage of said panel assembly opens to one side of said partition wall, and that major parts of said conductive panel members of said panel assembly are located in another side of said partition wall;

placing a liquid material in said one side of said partition wall;

immersing an open portion of said passage of said panel assembly, fitted into said through opening of said partition wall, into said liquid material;

increasing a pressure of an environment in said other side of said partition wall to deform said at least one of conductive panel members of said panel assembly, to evacuate said gap in said panel assembly; and

decreasing a pressure of said environment in said other side of said partition wall to deform said at least one of conductive panel members of said panel assembly, to cause a flow of said liquid material from said one side of said partition wall into said gap in said panel assembly through said passage, and to fill said gap with said liquid material.

11. A method according to claim 10, wherein said partition wall includes a plurality of through openings, into which respective parts of a plurality of panel assemblies are capable of being fitted in a hermetically sealed manner, and wherein said gap of each of said panel assemblies is simultaneously filled with said liquid material.

12. A panel-type peripheral device produced by a method according to claim 10.

13. A liquid pouring system comprising said

partition wall provided in a method according to claim 10.

14. A liquid pouring system according to claim 13, further comprising a liquid-material storing vessel provided in said one side of said partition wall, a pressure regulating chamber provided in said other side of said partition wall, and a support mechanism for securely supporting said panel assembly in a state where said part of said panel assembly is fitted into said through opening of said partition wall.

15. A method according to claim 10, wherein said panel-type peripheral device has a configuration of a touch panel including a pair of detecting elements as said pair of conductive panel members, each detecting element being provided with a transparent insulating substrate and a transparent conductive film on a first side of said insulating substrate, and wherein said liquid material is a transparent insulating liquid material.

16. A touch panel produced by a method according to claim 15.

17. A method of producing a panel-type peripheral device including a pair of conductive panel members, each conductive panel member being provided with an insulating substrate and a conductive film on a first side of said insulating substrate, comprising:

providing a panel assembly including said pair of conductive panel members fixed to each other with respective conductive films thereof oppositely facing to each other through a gap defined therebetween, said panel assembly having a passage for communicating said gap with an environment outside of said panel assembly, said gap being hermetically sealed against the environment at a region other than said passage;

providing a wall including a through opening, into which a part of said panel assembly is capable of being fitted;

fitting said part of said panel assembly into said through opening of said wall, in such a manner that said passage of said panel assembly opens to one side of said wall;

depressurizing an environment in both sides of said wall into a vacuum condition;

placing a liquid material in said one side of said wall to immerse an open portion of said passage of said panel assembly into said liquid material;

flowing said liquid material from said one side of said wall into said gap in said panel assembly through said passage by a function of gravity, to fill said gap with said liquid material.

18. A method according to claim 17, wherein said wall includes a plurality of through openings, into which respective parts of a plurality of panel assemblies are capable of being fitted, and wherein said gap of each of said panel assemblies is simultaneously filled with said liquid material.

19. A method according to claim 17, wherein said wall is capable of closing between said one side and said other side in a hermetically sealed manner, and further comprising a step of varying a pressure of said environment in said other side of said wall, after said gap of said panel assembly is filled with said liquid material, to adjust a volume of said liquid material in said gap.

20. A panel-type peripheral device produced by a method according to claim 17.

21. A liquid pouring system comprising said wall provided in a method according to claim 17.

22. A liquid pouring system according to claim 21, further comprising a liquid-material storing vessel provided in said one side of said wall, a pressure regulating chamber continuously formed around said wall and said liquid-material storing vessel, and a support mechanism for securely supporting said panel assembly in

a state where said part of said panel assembly is fitted into said through opening of said wall.

23. A method according to claim 17, wherein said panel-type peripheral device has a configuration of a touch panel including a pair of detecting elements as said pair of conductive panel members, each detecting element being provided with a transparent insulating substrate and a transparent conductive film on a first side of said insulating substrate, and wherein said liquid material is a transparent insulating liquid material.

24. A touch panel produced by a method according to claim 23.

25. A panel-type peripheral device comprising:

a pair of insulating substrates spaced from and opposed to each other;

a pair of conductive films respectively formed on opposed surfaces of said insulating substrates to face oppositely to each other through a gap;

an adhesive sealing member for sealing said gap against an outside environment and fixing said insulating substrates with each other; and

a liquid material filled and sealed in said gap;

wherein said adhesive sealing member includes:

a strip-shaped adhesive layer laminated on said opposed surfaces of said insulating substrates to extend along outer peripheries of said insulating substrates;

at least one passage formed adjacent to said adhesive layer for pouring said liquid material into said gap;

a sealant for sealing said at least one passage;

each of said at least one passage being provided with one exterior port opening to the

outside environment and at least one interior port independently opening to said gap, each interior port having an opening area smaller than said exterior port.